

Strategy Design Construction

415 Massachusetts Avenue Indianapolis, IN 46204 www.schmidt-arch.com

Submittal Reviewed

Project Name: **CPCSC Learning Center**

Project Number: 2014-046.ECL Submittal ID: 10-230900-01

Reviewed and checked only for conformance with design concepts and with the information given in the Contract Documents. This review does not release the Contractor from the responsibility to provide appropriate quantities, field measurements, dimensional stability, installation, anchorage, and coordination with other trades or release the Contractor from responsibility for deviations from the requirements of the Contract Documents or from responsibility for errors and omissions contained thereon.

Action:

Reviewed as Submitted - No Resubmittal Required

Received On: 1/28/2015 2/2/2015 Reviewed On: Shane Cox Reviewed By:

For Reviewers Use Only:







SUBMITTAL TRANSMITTAL RECORD

DATE: 12/22/2014

TSC #: 214080

RE: CPCSC

LEARNING CENTER

The Skillman Corporation Attn: Debbie Oliver

NOTE: ONLY ONE SPECIFICATION SECTION IS TO BE SUBMITTED PER TRANSMITTAL.

| CONTRACTOR NAME: | CIRCLE "R" MECHANICAL, INC. | | | |
|---------------------------------------|---|----------|----------------------|-------------------------|
| BID CATEGORY NAME AND NUMBER: | BID CATEGORY #10 - MECHANICAL | | | |
| SPECIFICATIONS SECTION NO: | IS THIS A RESUBMITTAL?: 23 09 00.99 YES: NO: NO: | | | |
| SECTION NAME AND DESCRIPTION: | INSTRUMENTATION AND CONTROL FOR HVAC | | | |
| MANUFACTURER/ SUPPLIER: | DAIKIN NORTH AMERICA LLC | | | |
| TYPE OF SUBMITTAL & NUMBER OF COPIES: | | | | |
| SHOP DRAWINGS: | PRODUCT DATA: | SAMPLES: | COLOR SELECTIONS: | CLOSE-OUT DOCUMENTS: |
| REMARKS: | | | | |

SUBMITTED BY: Rick Wozniak

Indiana Thermal Solutions

6872 Hillsdale Court Indianapolis, IN 46250 Bob Wolfram (317) 570-5400 – Phone bobw@its-Indiana.com

SUBMITTAL

INSTRUMENTATION and CONTROL for HVAC SPEC. SECTION: 23 09 00.99

Project: Crown Point Community School Corporation

Learning Center

Location: Crown Point, Indiana

Architect: Schmidt Associates, Inc.

Engineer: Schmidt Associates, Inc.

Contractor: Circle "R" Mechanical, Inc.

Date: 12/22/2014

SUBMITTED BY:



Job: Crown Point C.S.C. – Learning Center

Item: VRV III Air Conditioning

Spec: 23 09 00.99

Date: 12/22/2014 **Reviewed by:** RW

INDIANA THERMAL SOLUTIONS



Submittal Data

Project: Crown Point Community School Corp

Learning Center

Customer: Circle "R" Mechanical

Date: December 15, 2014

Engineer: Schmidt Associates

| <u>Tag</u> | <u>Description</u> |
|------------|---------------------------|
| CU-1, CU-2 | Daikin VRV Control System |
| | Spec Section 230900.99 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Submitted by: Steve Miller Indiana Thermal Solutions

Drawings in this submittal package describe the equipment we propose to furnish for this project and are submitted for approval to manufacture.



Project name Crown Point Learning Center

Reference Submittal

Client name Circle "R" Mechanical

Revision 0

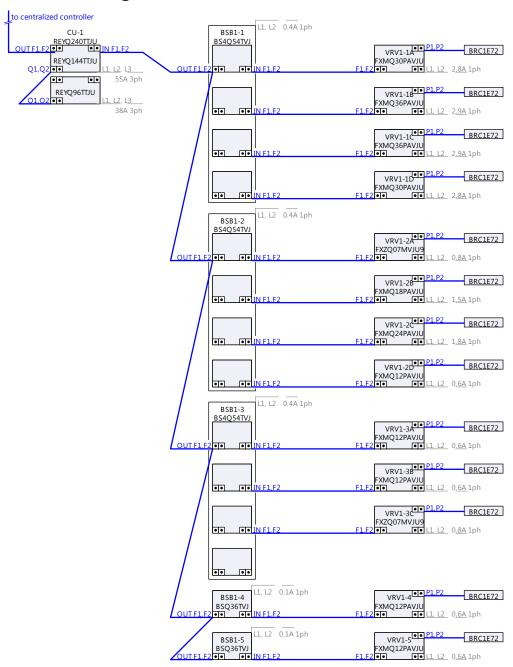
1. Wiring Diagrams

NOTES:

- 1) All wiring to be done in the field by others
- 2) I-Touch Manager location to be determined by others



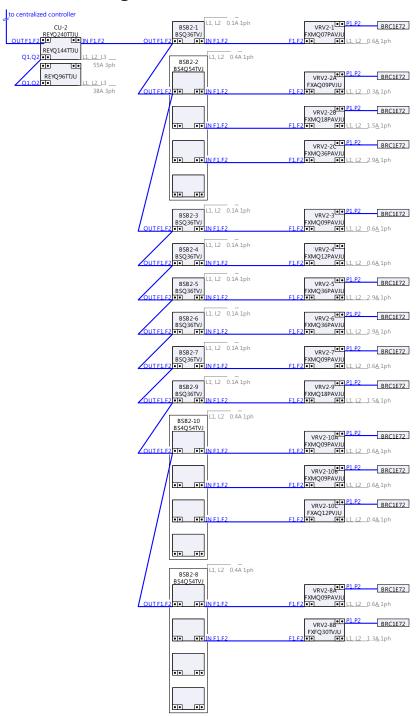
1.1. Wiring CU-1



The Xpress Selection Program is property of Daikin Europe NV. Daikin Europe NV cannot be held liable for any inaccuracy, reliability of the outcome of the Xpress Selection Program.



1.2. Wiring CU-2

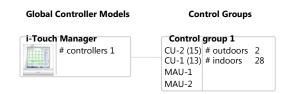


The Xpress Selection Program is property of Daikin Europe NV. Daikin Europe NV cannot be held liable for any inaccuracy, reliability of the outcome of the Xpress Selection Program.

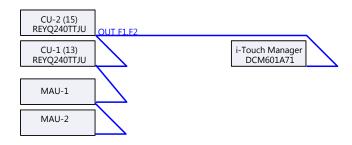


2. Centralized Controllers

2.1. Concept



2.2. Control group 1

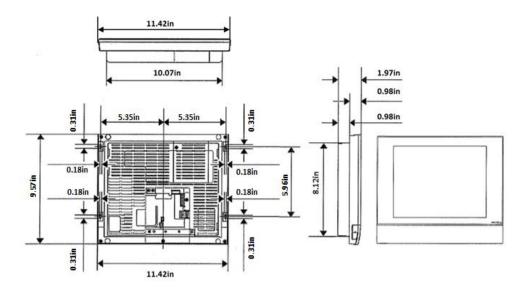




2.3. Dimensional Drawings

i-Touch Manager DCM601A71

DCM601A71





Indoor / Outdoor Unit Communications

- VRV outdoor units maintain communication with indoor units via F1-F2 loop
- The outdoor unit PCB assigns each indoor unit and individual address automatically
 - Logically, this address is separate from the group address
- The outdoor unit PCB monitors indoor units PCB status
 - Calls for cooling and heating (thermo ON), etc.
- The outdoor unit PCB supervises indoor units for specific operations and status, etc.
 - System level malfunctions
 - Oil recovery operation mode
 - Defrost operation mode



VRV Control In-Depth

Slide 7
© 2008 Daikin AC



Submittal Data Sheet

Intelligent Touch Manager

| Project Name: | Crown Point Learning Center | |
|---------------|-----------------------------|---------------|
| Location: | | Approval: |
| Engineer: | | Date: |
| Submitted to: | | Construction: |
| Submitted by: | | Unit #: |
| Reference: | | Drawing #: |

For use with the following VRV Models: FXAQ, FXDQ, FXFQ, FXHQ, FXLQ, FXMQ, FXMQ_MF, FXNQ, FXOQ, FXSQ, FXTQ, FXZQ For use with the following Daikin SkyAir Models: FAQ, FCQ, FHQ, FTQ

Capacity:

| | intelligent Touch | iTM Plus Adapter | |
|---|-------------------|------------------------|--|
| Model No. | Manager | (option) | |
| | DCM601A71 | DCM601A72 | |
| Maximum Indoor Unit | 64 | 64 | |
| Groups: | 04 | 04 | |
| Max Indoor Units: | 128 | 128 | |
| Max Outdoor Units: | 10 | 10 | |
| *Systems Total: 512 Indoor Unit Groups (1024 Indoor | | os (1024 Indoor Units) | |

Operating Details:

| Power Supply (Externally supplied): | 24 VAC, 60 Hz | 24 VAC, 60 Hz |
|-------------------------------------|-------------------------|------------------------|
| Power Consumption: | 23 Watts | 23 Watts |
| Operating Temp Range: | 32-104°F | 14 - 122°F |
| Operating Humidity | 85% or less | 85% or less |
| Range: | (w/o condensation) | (w/o condensation) |
| Dimensions (WxHxD): | 11.42 x 9.57 x 1.97 in. | 6.30 x 5.87 x 2.41 in. |
| Weight (Mass): | 5.3 lbs. (2.4 kg) | 1.1 lbs. (0.5 kg) |
| Certifications: | FCC Part | 15 Class B |
| | | |

Communication:

| DIII-NET Systems: | 1 | 1 |
|--|---|-----|
| RJ-45 (Ethernet) 100Base-TX or 10Base-T | 2 | N/A |
| USB Port USB2.0 (2GB to 32GB) | 1 | N/A |
| RS485 (19 - 22 AWG) | 1 | 1 |

Input Terminals:

| Digital Input forced shutdown of all indoor unit systems | 1 | N/A |
|--|--------------------------------------|--------------------------------------|
| Digital Input and/or | 3 x 10 mA @ 16 VDC/ 3 x 1 pulse | 4 x 10 mA @ 16 VDC/ 4 x 1 pulse |
| Pulse Input Terminals: | at 1 or 10 kWh at 100 ms interval | at 1 or 10 kWh at 100 ms interval |

 $\label{lem:configuration} \textbf{Configuration and engineering for each project is necessary}$





Standard Features:

- Web/Email Software
- One year warranty

Software Options:

- Power Proportional Distribution (PPD)
 Software (DCM002A71)
- Energy Navigator Software (DCM008A71)

Hardware Options:

- iTM DIII-NET Plus Adapter(DCM601A72) for expanding indoor unit groups up to 512 groups (1024 indoor units)
- WAGO I/O unit for controlling/ monitoring of external equipment via Di, Do, or Ai
- Digital Input (DEC101A51-US2) for monitoring external equipment
- Digital Input/Output (DEC102A51-US2) for controlling / monitoring of external equipment
- iTM Integrator (DCM601A73) for controlling/monitoring up to 5 iTMs

The Power Proportional Distribution (PPD) feature supplies the user with a reasonably calculated apportionment of the total power consumption by the Daikin air-conditioning system to individual units on the system. Because input to the PPD includes measured pulses in the refrigerant system and because the air-conditioning system includes a number of variables, to include operating temperatures and pressures, piping lengths, heat exchange rates and others, no meter-type apportionment of individual user's consumption can be made. However, the PPD feature provides an apportionment methodology that uses highly advanced technology as applied to the many variables in the air-conditioning system.

*Note: See Management Size on page two for System Total explanation



Submittal Data Sheet

Intelligent Touch Manager

| Project Name: | Crown Point Learning Center | |
|---------------|-----------------------------|---------------|
| Location: | | Approval: |
| Engineer: | | Date: |
| Submitted to: | | Construction: |
| Submitted by: | | Unit #: |
| Reference: | | Drawing #: |

Features / Benefits:

- Management size up to 512 indoor unit groups (1024 indoor units)
 - The iTM can manage one (1) DIII-Net system which can have up to 64 indoor unit groups (128 indoor units).
 - The iTM can manage up to eight (8) DIII-Net systems with the addition of the iTM Plus Adapter which can manage one (1) DIII-Net system each. This means up to seven (7) iTM adapters can be daisy chained to the iTM.

■ Web Accessibility

- Web and Alert Email function standard with iTM
- Web browser shows the same screen as iTM touch screen
- All iTM configuration/setup can be done through Web Option or touch screen

■ Visual Navigation Screen

• Floor plan layout view is available

■ Easy installation

- Wall mount and flush mount installation
- Automatic indoor unit registration and indoor unit model detection
- 24 VAC 60 Hz

■ Easy Engineering

- iTM can be configured off site via Pre-setting Tool
- All data can be uploaded and downloaded by USB flash drive

■ History

- All operations, automatic controls and status changes are stored in history (up to 1,000,000 items)
- D-Net compatible

■ Energy management (Optional)

- Visualization of energy consumption data
- Pinpoint areas where energy is wasted

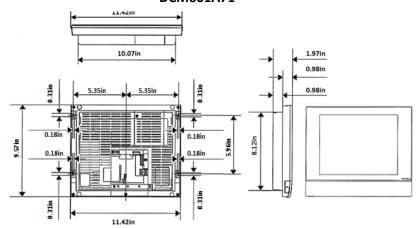
■ Power Proportional Distribution (PPD) (Optional)

Tenant billing

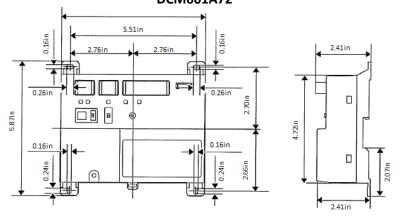
■ Building facilities management

- Building facilities are connected by using WAGO I/O system (optional)
- I/O configuration for Digital Input, Digital Output, and Analog Input
- The iTM is equipped with 3 digital/pulse inputs and the iTM Plus Adapter comes equipped with 4 digital/pulse inputs

Intelligent Touch Manager (iTM) DCM601A71



iTM DIII-NET Plus Adapter DCM601A72



| Specifications of Communication Cabling (DIII-NET) | | |
|--|--|--|
| Туре | 2-conductor, stranded, non-shielded copper cable / PVC of vinyl jacket | |
| Size | AWG 18-2 | |
| Total | Maximum wiring distance between units 3,280 ft. | |
| Length | Total wire length 6,550 ft. | |



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Submittal Data Sheet

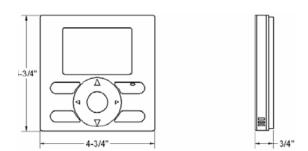
BRC1E72 - New Navigation Controller

| Project Name: Crown Point Learning Cer | ner | |
|--|---------------|--|
| Location: | Approval: | |
| Engineer: | Date: | |
| Submitted to: | Construction: | |
| Submitted by: | Unit #: | |
| Reference: | Drawing #: | |

For use with the following VRV indoor unit models: FXAQ, FXDQ, FXFQ, FXHQ, FXLQ, FXMQ, FXMQ_MF, FXNQ, FXSQ, FXTQ, FXZQ For use with the following Daikin SkyAir indoor unit models: FAQ, FBQ, FCQ, FHQ, FTQ

| Model | BRC1E72 |
|--------------------------|---|
| Description | New Navigation Remote Controller |
| Maximum Indoor Units | 16 |
| Communication Wire | 18AWG-2, No polarity Stranded, Non-shielded |
| Total Wiring Length | 1,640 ft (500 m) |
| Communication Protocol | Daikin Proprietary P1P2 protocol |
| Power | 16VDC supplied by Indoor unit (1.58VA maximum) |
| Comfort Setpoint Range | 60 to 90 °F (16 to 32 °C) |
| Setback Setpoint Range | 40 to 95 °F (5 to 35°C) |
| Operating Temp Range | 14 to 122°F (-10 to 50°C) |
| Operating Humidity Range | 75% or less (w/o condensation) |
| Dimensions (WxHxD) | 4.72x4.72x0.75 inch (120x120x19 mm) |
| Weight (Mass) | 0.42 lb (0.19 kg) |





Features / Benefits:

- Up to 16 indoor units are controllable in one group
- Can be combined with a secondary controller for dual operation
- Backlit LCD display in English, French, or Spanish
- Temperature sensor with configurable offset
- Display of Temperature and Setpoint in 1°F / °C increments
- Three display modes Detailed, Standard and Simple
- Dual setpoints (individual cooling and heating setpoints) with minimum setpoint differential or Single setpoint (occupied period)
- Setpoint range limits for Cooling and Heating
- Independent cool/heat setback setpoints (unoccupied period)
- Auto changeover mode can automatically change to cool/heat mode at setpoint +/-1° F (can be configured from 1 to 4° F using field settings) with a guard timer for 15, 30, 60 or 90 min. Surely change at another +/-1° F (can be configured from 1 to 4° F using field settings) ignoring the guard timer
- Built in 7, 5+2, 5+1+1, and 1 (Everyday) schedule with up to 5 actions per day with independent cool/heat or setback setpoints
- Automatic adjustment for Daylight Savings Time (DST)
- 48 hour clock/calendar backup (in case of power failure)
- Constantly monitors the system for malfunctions with immediate display of fault location and condition
- Prohibit buttons on remote controller
- Limit selectable operation modes
- Display can be configured not to show setpoint when unit is Off. Display Off, instead of mode when unit is off. Fan speed display removable.
- Backwards compatible



Submittal Data Sheet

BRC1E72 - New Navigation Controller

| Project Name: | Crown Point Learning Center | |
|---------------|-----------------------------|---------------|
| Location: | | Approval: |
| Engineer: | | Date: |
| Submitted to: | | Construction: |
| Submitted by: | | Unit #: |
| Reference: | | Drawing #: |

Face Decal Options:

- Face decal options to hide unnecessary buttons
 - Hidden buttons can be used/accessed by service personnel without removing the face decal due to its flexibility











| Used with | Single Setpoint mode | | | Dual Setpoint mode | | |
|-------------|---------------------------------------|-------------|------------|--------------------|------------|-------------|
| Model | BRC1E72RM | BRC1E72RF | BRC1E72RMF | BRC1E72RM2 | BRC1E72RF2 | BRC1E72RMF2 |
| | Frank | France | From | Franks | From | Perm |
| | · · · · · · · · · · · · · · · · · · · | • ~~ • • | © ⊙ Ö | Ö. ⊕. Ö | | <u></u> |
| | • | | · · | • | · · | - |
| On/Off | X | X | X | X | X | X |
| Mode | × | | Х | X | | X |
| Fan | | × | Х | | Х | X |
| Up, Down | X | × | × | × | X | X |
| Left, Right | | | | Х | Х | Х |
| Menu/OK | | | | | | |
| Cancel | | | | | | |



MicroTech® III Controller for Commercial Rooftop Systems, Applied Rooftop Systems and Self-Contained Air Conditioners

Models: DPS, MPS, RAH, RCS, RDS, RDT, RFS, RPE, SWP and SWT





Main Control Board (MCB)

Figure 1: Main Control Board

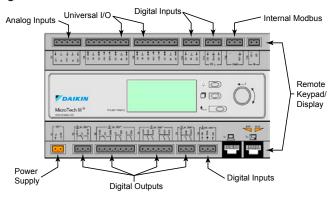


Figure 2: Expansion Boards A, B, C, D, E

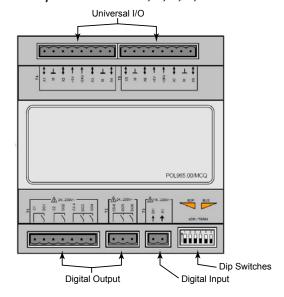


Figure 3: Expansion Board Side Views

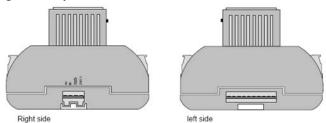


Figure 4: Dip Switch Settings

| Expansion Board A | Switch #5 in the up position (all others down) | |
|----------------------|---|-------------|
| Expansion Board B | Switch #4 in the up position (all others down) | |
| Expansion Board C | Switch #4 and #5 in the up position (all others down) | |
| Expansion Board D | Switch #3 in the up position (all others down) | 1 2 3 4 5 6 |
| Expansion Board E | Switch #3 and #5 in the up position (all others down) | |
| Dipswitch #6 | Switch #6 must be in the up position on the last expansion board in the string regardless whether it is A, B, C, D, or E. | |

Table 2: MCB I/O Connection Labeling

| MCB I/O | Connection Label | |
|---------|---------------------------|--|
| T1 | 24 VOLT POWER SUPPLY | |
| T2 | DIGITAL OUTPUT 1, | |
| Т3 | DIGITAL OUTPUT 2, 3, 4 | |
| T4 | DIGITAL OUTPUT 5, 6, 7, 8 | |
| T5 | DIGITAL OUTPUT 9, 10 | |
| T6 | DIGITAL INPUT 5, 6 | |
| Т7 | ANALOG INPUT 1, 2, 3 | |
| T8 | UNIVERSAL I/O 1, 2, 3, 4 | |
| Т9 | UNIVERSAL I/O 5, 6, 7, 8 | |
| T10 | DIGITAL INPUT 1, 2 | |
| T11 | DIGITAL INPUT 3, 4 | |
| T12 | MODBUS/VFD | |
| T13 | PROCESS BUS/FUTURE | |



The keypad/display consists of a 5-line by 22 character display, three keys and a "push and roll" navigation wheel. There is an Alarm Button, Menu (Home) Button, and a Back Button. The wheel is used to navigate between lines on a screen (page) and to increase and decrease changeable values when editing. Pushing the wheel acts as an Enter Button.

Figure 5: Keypad/Display



The first line on each page includes the page title and the line number to which the cursor is currently "pointing". The line numbers are X/Y to indicate line number X of a total of Y lines for that page. The left most position of the title line includes an "up" arrow to indicate there are pages "above" the currently displayed items, a "down" arrow to indicate there are pages "below" the currently displayed items or an "up/down" arrow to indicate there are pages "above and below" the currently displayed page.

Each line on a page can contain status only information or include changeable data fields. When a line contains status only information and the cursor is on that line all but the value field of that line is highlighted meaning the text is white with a black box around it. When the line contains a changeable value and the cursor is at that line, the entire line is highlighted. Each line on a page may also be defined as a "jump" line, meaning pushing the navigation wheel will cause a "jump" to a new page. An arrow is displayed to the far right of the line to indicate it is a "jump" line and the entire line is highlighted when the cursor is on that line.

The keypad/display Information is organized into Menu groups; Main Menu, Quick Menu, View/Set Unit Menu, Commission Unit Menu, Manual Control Menu, Service Menu, Unit Configuration Menu and Alarm list Menus.

NOTE: Only menus and items that are applicable to the specific unit configuration are displayed.

The Main Menu allows the user to enter a password, access the Quick Menu pages, view the current unit state, access the Alarm List Menu as well as access to information about the unit. The Quick Menu provides access to status information indicating the current operating condition of the unit. The View/Set Unit Menus include basic menus and items required to setup the unit for general operation. These include such things as control mode, occupancy mode, and heating and cooling setpoints. The Commission Unit Menus include more advanced items for "tuning" unit operation such as PI loop parameters and time delays. The Manual Control Menu allows service personnel to test unit specific operation manually. The Unit Configuration Menu allows the user to access to the unit specific configuration information. These generally do not needing changing or accessing unless there is a fundamental change to, or a problem with, the unit operation. The Alarm Lists Menu includes active alarm and alarm log information.

MAU-1 & 2

DPS/MPS/RAH/RPS/SWP Space Sensor





Installation

Front Panel

The display is standard for all sensors. The functional keys on the display include the setpoint adjustment buttons and the tenant override button, as well as a numerical display to view changes.

Setpoint Buttons



When pressed, the setpoint will display for three to four seconds. When pressed again, the setpoint will change in one degree increments. It will only change within the setpoint range that was ordered.

Tenant Override Button



When the override button is pressed for 3-5 seconds the tenant override function will be initiated per the MicroTech III controller. The amount of time that the unit will come out of the unoccupied mode and operate in the tenant override mode is adjustable at the unit controller.

Numerical Display

The default display shows current temperature. When the up/down buttons are pushed, then the display will show and adjust the current setpoint and hold the display for 3 to 4 seconds. The unit can also be set up to display setpoint only or for setpoint lockout.

Figure 3: Front Panel Display



Specifications and Parts

Sensor Specs

Power:

15 to 28 VAC 924 VAC nominal)

Power Consumption:

.17 VA maximum AC

Wiring:

See Terminal section (page 3)

Display:

LCD - 3.5 digits @ 0.6 inch H

Temperature display units - 0.1° (F/C) increments

Setpoints in 0.5° steps

Button Options:

Setpoint Up/Down buttons

Tenant Override button

Environmantal Ambient:

Temperature - 32 to 122°F (0 to 50°C)

Humidity - 0 to 95% RH non-condensing

Material:

ABS plastic, UL94V-0

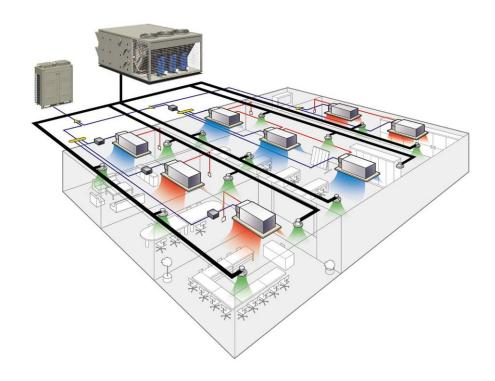
Parts

Part Number: 910143408



DIII-NET Communication Gateway For Daikin Air Handling Units integrated with a Daikin VRV System

Applied Rooftop Model: DPS

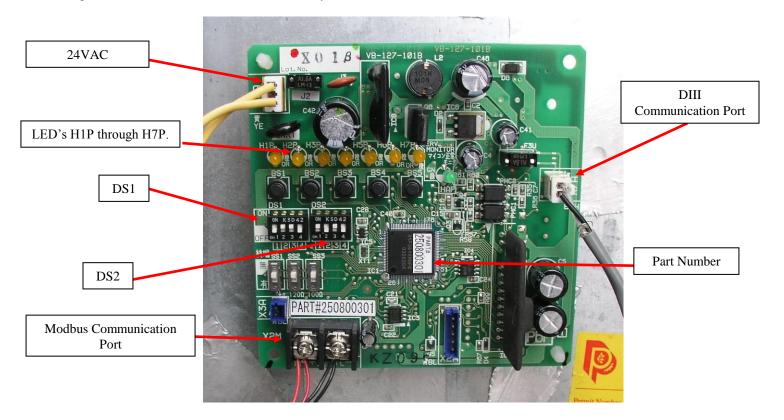




Component Data

Major components of the DIII-NET Communication Gateway are labeled in .

Figure 2, DIII-NET Communication Gateway Installed



Light Emitting Diodes (LEDs)

The LED's on the DIII-NET Communication Gateway are used to indicate either the DIII-NET Communication Gateway is working correctly or there is a fault. A description of what each of the LEDs being energized or de-energized means is listed in Table 1.

Table 1, LED's

| LED | Function | OFF | ON | |
|--------------------------------------|----------------------------------|---|---------------|--|
| H1P | DIII-NET Sending | Not Transmitting | Transmitting | |
| H2P | DIII-NET Receiving | Not Receiving | Receiving | |
| НЗР | Modbus Sending | Not Transmitting | Transmitting | |
| H4P | Modbus Receiving | Not Receiving | Receiving | |
| H5P | MicroTech III Fault Indication | No Faults | Fault Alarm | |
| Н6Р | MicroTech III Problem Indication | No Problems | Problem Alarm | |
| H7P MicroTech III Warning Indication | | No Warnings | Warning Alarm | |
| HAP | Micro Processor Operation | 800ms Flashing Period Indicates Operation | | |

Installation

The DIII-NET Communication Gateway will be factory installed. If it is necessary to replace this board, see section <u>Replacing DIII-NET Communication Gateway</u>. If a new board is being installed on an existing unit, see section <u>Installing a New DIII NET Communication Gateway</u>.

Wiring

△ CAUTION

Electrostatic discharge hazard.

Can cause equipment damage.

This equipment contains sensitive electronic components that may be damaged by electrostatic discharge from your hands. Before you handle a communications module, you need to touch a grounded object, such as the metal enclosure, in order to discharge the electrostatic potential in your body.

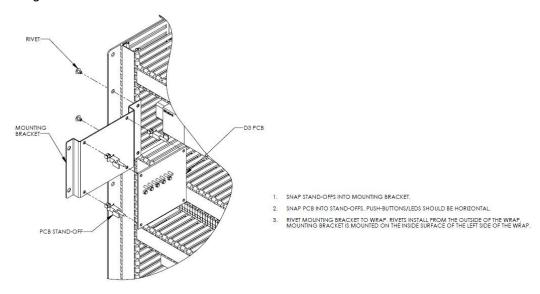
Installing a New DIII-NET Communication Gateway

⚠ WARNING

Hazardous voltage. Can cause severe injury or death. Disconnect electric power before servicing equipment. More than one disconnect may be required to de-energize the unit.

- 1. Remove power from the MicroTech III Applied Air Handling Unit Controller.
- 2. Remove power from the Daikin Air Handling Unit.
- 3. Install mounting bracket on the side wall of the control cabinet with 4 rivets/screws, see Figure 3.
- 4. Mount DIII-NET Communication Gateway to the mounting bracket with 4 standard circuit board standoffs. Verify the board is securely attached to the mounting bracket. See Figures 3 and 4.

Figure 3, Mounting bracket installation



- 5. Install 120/24 VAC transformer in the control cabinet. *The DIII-NET Communication Gateway must have its own, power supply.*
- 6. Wire 120VAC power to the transformer using open terminals from the T1 transformer inside the unit control cabinet. The secondary of this transformer must remain ungrounded.

Figure 4, DIII-NET Communication Gateway mounted in unit



- 7. Connect the 24VAC power from the transformer to X6A on the DIII-NET Communication Gateway using the provided wire harness. See Figure 5.
- 8. If there are fewer than 2 pairs of modbus wires going to the MCB, skip to step 11. If there are 2 pairs continue with step 9.
- 9. Remove 1 pair of modbus wires from the MCB. (A positive and its associated negative.) *Note: the 2 wires removed must be a pair connecting the same two devices.* See Figure 6.
- 10. Attach the disconnected wires from the MCB to the Modbus Communication Port (X2M) on the DIII-NET Communication Gateway. (+ to terminal A, and to terminal B.) See Figure 5.

Figure 5, DIII-NET Communication Gateway Schematics

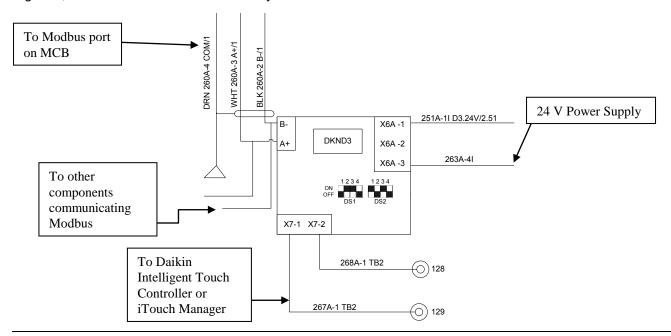
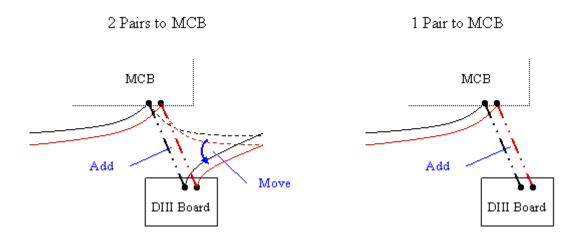
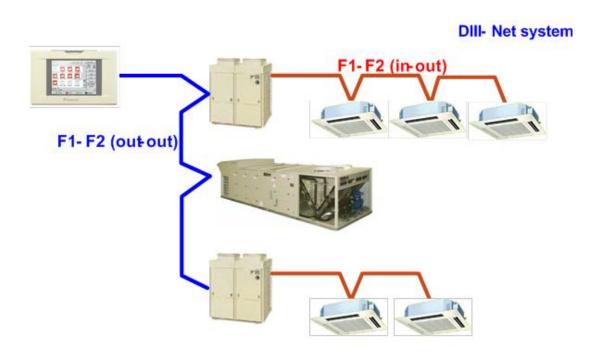


Figure 6, Incorporating DIII-NET board into an existing Modbus Daisy Chain



- 11. Connect a pair of wires from the MCB to the Modbus Communication Port (X2M) on the DIII-NET Communication Gateway. See Figure 5. (*There should be 2 pairs of modbus wires connected to the MCB at this point, unless there were none to begin with, see Figure 6.*)
- 12. The DIII-NET Communications Gateway is treated like any other outdoor unit on the DIII-NET communications trunk. Connect DIII-NET communication wires from the outdoor unit trunk to the DIII-NET communications port (X7A), using the provided wire harness. See Figure 7. *Polarity does not matter. For more information on DIII-Net communications wiring refer to Manual DCS601C71*

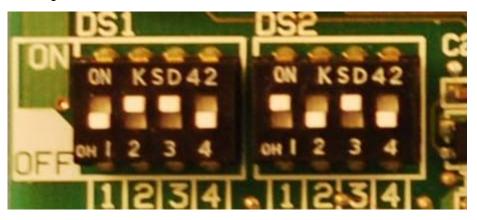
Figure 7, DIII-NET Wiring Schematic





- 13. Position the binary DIP switches on the DIII-NET Communication Gateway to "0110 1010" as configured in Figure 8.
- 14. Power up the Daikin Applied Air Handling Unit, MicroTech III Unit Controller and DIII-NET Communication Gateway.
- 15. Configure MicroTech III and Daikin VRV unit controllers as instructed in the <u>Integration section</u>. For information on the iTouch Manager, refer to user's manual EM11A017.

Figure 8, DIP Switch Configuration



In Figure 8, flipping the binary switches up is on, and flipping them down is off. Switches should be configured to 0110 1010 as shown.

Replacing an Existing DIII-NET Communication Gateway

To replace a DIII-NET Communication Gateway:

MARNING

Hazardous voltage. Can cause severe injury or death. Disconnect electric power before servicing equipment. More than one disconnect may be required to de-energize the unit.

- 1. Remove power from the Daikin Applied Air Handling Unit.
- 2. Disconnect all wiring to DIII-NET Communication Gateway.
- 3. Remove old DIII-NET Communication Gateway from its mountings.
- 4. Replace with new DIII-NET Communication Gateway in same manner as the old board. Verify the board is securely attached to the unit. See Figure 4.
- 5. Reconnect all wiring. See Figure 2. Use the existing wires only if they are in good condition; do not attempt to use worn or damaged wires under any circumstances. See the "Service Information" section of this document for a list replacement parts.
- 6. Confirm binary switches per instructions in step 13 of section "Installing a New DIII-NET Communication Gateway." See Figure 8.
- 7. Power up the Daikin Applied Air Handling Unit.
- 8. Confirm address and parameters on unit controller, as per instructions in the <u>Integration section</u>

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Integration

Once the DIII-NET Communication Gateway has been properly installed on the unit and connected to a DIII network, it is then possible to integrate the unit controller with a Daikin Intelligent Touch Controller or iTouch Manager over a DIII network. The integration process is described in the following section.

Configuring the DIII-NET Communication Gateway

The MicroTech III Applied Air Handling Unit Controller and optional DIII-NET Communication Gateways are designed, programmed, and configured at the factory. However, the DIII-NET Communication Gateway needs to have a unique indoor unit address compatible with the existing DIII network. This address and any other configurations can be set through the keypad on the MicroTech III Unit Controller. The unit is ready to operate with the default parameter values in the unit controller even before you change the default parameters for your particular network. Appendix B lists the menu items for the "D3 Set-Up Menu" and "D3 Status Menu."

Note: Refer to Operation Manual OM 920 for details regarding the MicroTech III Applied Air Handling Unit Controller keypad/display. Manual is available at www.DaikinApplied.com